



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/560,444

12/13/2005

Norimasa Furukawa

09792909-6557

8873

26263

7590

08/18/2008

SONNENSCHN NATH & ROSENTHAL LLP

P.O. BOX 061080

WACKER DRIVE STATION, SEARS TOWER

CHICAGO, IL 60606-1080

EXAMINER

PHILOGENE, HAISSA

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

08/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/560,444	FURUKAWA, NORIMASA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Haissa Philogene	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4,6,8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,8 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/23/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION*****Claim Objections***

Claims 1, 4, and 6 are objected to because of the following informalities: In claim 1, lines 9 and 17, claim 4, lines 8 and 17 and claim 6, lines 10 and 19, change "resister" to -resistor-. In claim 1, line 2, after "devices", add -being light emitting diodes-. In claim 4, line 11, after "circuit", delete "for", as was discussed in the previous Office Action.. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanabe et al., Patent No. 6,870,328.

As per claim 1, Tanabe discloses in Figs. 5 and 6 a constant current driving unit for constant current driving a plurality of series connected devices(9) by a pulse width modulating constant current driving circuit (2), comprising:

said plurality of series connected devices (9);\_a bypass circuit (20) (see Figs 5 and 6) including (a) a plurality of transistors Tr2 or thyristors (see Col.8, lines 36-38), each of which is connected in parallel with a respective one of said series connected light emitting diodes (9), and (b) a gate potential setting circuit (R5-R7 and zener diode) for providing a gate potential to the gate of thyristor Tr2;

a switching device (Tr, fig.5) for pulse width modulation; and

a resistor R1 connected in parallel with said switching device for pulse width modulation,

wherein,

said gate potential setting circuit provides to said thyristors a gate potential value such that, when said series connected devices (9) are operating as normally, said thyristors are in the off state (see also Col.8, lines 5-16);

said gate potential setting circuit (Q2) provides to said thyristors another gate potential value\_such that, when said series connected\_devices (9) are in the open state, said thyristors are on (see also Col.8, lines 17-32) and

said resistor R1 is coupled to said pulse width modulating constant current driving circuit (2) such that

Art Unit: 2821

current I for maintaining the on state of a turned-on thyristor flows through said resistor (see Figs. 5 and 6).

As per claim 8, Tanabe discloses in Figs. 5 and 6 a bypass circuit (20) comprising: a plurality of transistors Tr2 or thyristsors (see Col.8, lines 34-38) ; a plurality of voltage dividers (R5R6) each of which is coupled in parallel with a respective one of said thyristsors Tr2; said voltage dividers comprising operatively coupled resistors (R5 R6); and a plurality of series connected light emitting diodes (9), wherein, each voltage divider(R5R6) is connected to the gate terminal of its respective thyristor Tr2 through shunt regulator (R7, zener diode) and supplies a gate potential value to the thyristor (Tr2) such that the thyristor is turned off during normal operation of said series-connected light emitting diodes (see also Col.8, lines 5-16) and turned on when said series- connected light emitting diodes are open-circuited (see also Col.8, lines 17-32) .

As per claim 10, Tanabe discloses a gate potential setting circuit comprising a plurality of thyristors Tr2; a plurality of voltage dividers (R5 R6) each of which is coupled in parallel with a respective one of said thyristors Tr2; said voltage dividers comprising operatively coupled resistors (R5 R6); and a plurality Of series connected LEDs (9), wherein each voltage divider (R5R6) is connected to the gate terminal of its respective thyristor Tr2 through shunt regulator (R7 zener diode) and supplies a gate potential value(V5) to the thyristor such that the thyristor is turned off during normal operation of said series-connected LEDs (9) and turned on when said series-connected LEDs are open-circuited (see also fig.6 and Col.8, lines 5-32) for driving a light source formed of the series of LEDs (9) capable of being a backlight light source as it is used in vehicles.

As per claim 4, Tanabe discloses the claimed invention substantially as explained above. Further, Tanabe discloses the LED unit (10) as a light source for vehicles, said LED unit having extensive uses such as rear combination lamp and LED head lamp and capable of being a backlight light source as it is used in vehicles for illuminating a display panel from a back side thereof , for example in a dashboard of the vehicle.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al in view of Ikeno et al., Patent No. 6,897,922.

Tanabe discloses the claimed invention substantially as explained above except for a color LCD apparatus comprising a light transmitting color LCD panel including a color filter and a backlight light source unit, for illuminating said light transmitting color LCD panel from the backside thereof. Ikeno discloses in Figs. 15 and 25 a color LCD apparatus (276) comprising a light transmitting color LCD panel (265) including a color filter (51, see Fig.15) and a backlight light source unit (266), for illuminating said light transmitting color LCD panel (265) from the backside thereof. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ the color LCD apparatus as taught by Ikeno into the Tanabe type system, because it would allow a display for a portable information terminal, portable telephone or any other devices that are able to display high quality images by creating color balanced viewable images.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hatanaka et al., Patent No. 7,185,995.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haissa Philogene whose telephone number is (571) 272-1827. The examiner can normally be reached on 8:30 A.M.-6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571)272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. P./

Primary Examiner, Art Unit 2821